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ABSTRACT

Ideas and methods for improving library service through changes in library catalogs are presented and discussed. These ideas and methods are in four basic areas: (1) methods for evaluating a library's current catalog(s); (2) costing different forms of the catalog; (3) examining the effects on an individual library's catalog(s) of Anglo-American Cataloging Rules II (AACR II) and the closing of its catalog by the Library of Congress (LC); (4) managing and planning for the changes resulting from AACR II, closing of the LC catalog, and changing the form of catalogs in individual libraries. Examples of all the methods are provided. (Author/JD)

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A NEW CATALOG: SOME IDEAS ON ITS PURPOSE, FORM, COST, AND PLANNING FOR IT

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Note: A talk given by Neal K. Kaske, Ph.D. of the Research Department, OCLC, Inc., at Mount Holyoke College for the New England Technical Services Librarians section of the New England Library Association spring meeting, April 3, 1979.

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A NEW CATALOG: SOME IDEAS ON ITS PURPOSE, FORM, COST, AND PLANNING FOR IT

My primary purpose today is to present some ideas and to discuss with you some methods for improving library services. We will focus on our catalogs, or as some people put it, "that thing that we must use to locate books and other materials within our libraries." My remarks are divided among four basic areas:

(1) Methods for evaluating a library's current catalog(s)

(2) Costing different forms of the catalog

(3) Examining the effects on an individual library's catalog(s) of AACR II and the Library of Congress's (LC) closing of its catalog

(4) Managing and planning for the changes which result from AACR II, LC closing its catalog, and changing the form of our catalogs.

Before presenting information in these four areas, I will share with you some of my prejudices, assumptions, and philosophies of librarianship so that you can understand my biases. First of all, I believe in The Five Laws of Library Science, as expressed by R. S. Ranganathan (1). Particular attention should be drawn to Law #5.

(1) Books are for use.

(2) Every book its reader.

(3) Every reader its book.

(4) Save the time of the reader.

(5) A library is a growing organism.

I strongly disagree with the kind of remarks made in a recent Library Journal editorial, February 15, 1979, entitled "Lollipops in the Rain." The article states:

> "Along with this optimism, however, comes a nagging fear that the success of OCLC and of the online databanks and the still burgeoning marvels of telecommunications may signal the end of a great deal of the library future. Without any substantial change, the library as we know it can quickly join the fraternity of buggy whip manufacturers, presiding over a shrinking responsibility while electronics and commercial firms take over an ever greater share of the provision of information to the nation." (2)

On the other hand, I am in complete agreement with the famous anthropologist L.S.B. Leakey, who is often quoted to have said, "Change or Perish." I believe we librarians, in or out of libraries, will take on added responsibilities for providing society with a sound and growing library-information system because we are changing. Also, we are the ones calling for and bringing about many of the changes affecting libraries.

A recent article in the Chronicle of Higher Education (3), reported the solution to a 124-year-old problem in mathematics that was solved with a computer. The Four-Color Problem, as it is called, is how to create a geopolitical map using only four colors. The problem seems simple, but it is actually very complex. (You can do it with five colors.) While no solution was found in 124 years, two mathematicians using a computer and having it work on the problem for some 1,200 hours found a solution. But, they cannot in the traditional mathematical sense show their proof and this, according to a philosopher cited in the article, changes our whole concept and definition of proof. (3)

This philosopher notes that the mathematicians appear to have solved the problem to their satisfaction, but their solution raises a new problem for philosophers: "There is no known proof that a format proof exists." This bit of esoteric news has been noted because we in libraries are very much a part of this news; the computer is changing our definition and proof of a catalog too.

Three additional biases and opinions can be stated as follows:

(1) Basic systems analysis and good scientific management practices can provide librarians with reasonable and cost-effective solutions to many of our current library problems.

(2) As librarians, we prefer to change the form of our catalog and the way in which it is used for one basic reason--better service to the patrons.

(3) Librarians all would like to adhere to a common set of cataloging rules.

The problems of changing to AACR II, changing the format of the catalog from cards to whatever, and changing the way in which we use catalogs are confusing enough to demand visual interpretations. Figure 1 illustrates a basic input, process, and output, with feedback loop diagram. Figure 2 shows a scheme that can be drawn using the diagram in Figure 1 applied to the library: patrons coming into the library where some process takes place and patrons leaving the library with some output. The inputs into the library in Figure 2 are staff, materials, records, and facilities. There is feedback between the patron and facilities; the patron and records; the patron and materials; and the patron and staff. When the library's catalog is viewed within this context as in Figure 3, its interaction between these elements becomes clear. These elements all go into creating cataloging records and files, which in turn feed into the process of creating the catalog. It also can be noted that people--in the form of patrons and librarians--use the catalog that libraries have created.

If we stop for just a second and look to where our problems are today, we find that we are changing the rules and the physical form of the catalog. We are possibly going to change the way in which the catalog is used too, i.e., adding additional points of entry into the catalog. These three major changes are noted in Figure 4. The changes are in format, rules, and access points. Planning and preparation for these kind of changes are very difficult because the changes are intertwined, or as the mathematicians prefer to say "confounding each other." And, the changes are confounding librarians.

In the ALA Glossary of Library Terms we find "catalog" defined as:

> "A list of books, maps, etc., arranged according to some definite plan. As distinguished from a bibliography it is a list which records, describes, and indexes the resources of a collection, a library, or a group of libraries.
>
> In a special library it may include entries for material outside the library and for various types of material, e.g., entries for abstracts of periodical articles and pamphlets, and entries under subject for research in progress and for organizations and individuals who are authoritative sources of information on specific subjects." (4)

How many of you have these types of entries in your libraries? Mitch Friedman, in his address at the LITA

Conference in San Francisco that addressed closing the card catalog, mentioned that librarians should be putting resource and information type of data into the catalog. This is a very simple task that we can do and is performed now with cards. But, as Mitch asked, if the catalog is automated, what format should librarians use? (5)

The ALA Glossary gives the following definition for "cataloging."

> "The process of preparing a catalog, or entries for a catalog. In a broad sense, all the processes connected with the preparation and maintaining of a catalog, including classification and assignment of subject headings. In a narrower sense, the determining of the forms of entry and preparing the bibliographical descriptions for a catalog." (4)

It is important to note that this definition does not limit the format of cataloging.

In order to evaluate the catalogs in libraries today we must first state clearly and succinctly the exact purpose of each library's catalog or catalogs. The basic purpose of card catalogs is the same across all libraries, but there are differences among them corresponding to the different patron populations that are served. Once it is known exactly what it is that catalogs provide, we then need to look at what files are required to support our catalog and what files our catalog supports. This is so very important because we are talking about changing a major part in our system. For example: What are the authority files? What format are they in? Where are they? All of these factors are important if one changes any major element or even a minor one within the catalog or files. I suggest that a file analysis be undertaken in an effort to understand the purposes and interrelationships between a library's files. The form provided in Figure 5 should assist librarians in this process.

After performing the file analysis, we may all find that our catalogs will not be the monsters some people forsee. The recent article in American Libraries, entitled "Adopting AACR2: The Case for Not Closing the Catalog" provides some excellent ideas. (6)

Our analysis of current catalogs should be conducted as a group project wherever possible within our libraries. Large libraries have the luxury of being able to put a number of different people together on a 'task force' and assign them the duties of determining what to do with the catalogs. The Future of the Catalog Committees at Berkeley, Michigan, Cornell, and many others are examples of these team efforts.

A library with two or three librarians has capabilities of developing a plan for that library if all staff members are involved (nonprofessionals as well as professionals), to some degree. Filing clerks know a great deal about the catalogs because they use them. Involving people throughout the organization provides the kind of understanding and internalization that is necessary to bring about real change within an organization. There is also nothing to prevent librarians from getting together with colleagues in other institutions on a monthly or quarterly basis to discuss these problems and make action plans as many now do.

Heeding these suggestions may be an added expense, both in human time and in dollars, but we are talking about making drastic changes to the catalog that will require a great deal of money. If these changes are made and the monies expended as anticipated, the planning for these changes deserves at least 10% of that money budget for the overall project. We need time to plan.

But just how do we bring about change in the library? The process of bringing about change within an organization has been discussed in many articles and books. Kurt Lewin suggests there are three key elements for bringing about change (7). These are:

(1) Unfreezing if necessary

(2) Moving to a new level

(3) Refreezing once again

These are the basic steps in the change process. That is, simply make sure people are ready for change. Develop the new methods, carry them out, i.e. move from one place to another, and then refreeze them by having people internalize the changes as their own.

Let us now turn to methods of costing these different forms of the catalog. In order to cost the different formats

of the catalog, we need to determine the cost components for each catalog examined. Figure 6 shows areas that one can use to cost any kind of operation. Each of these cost factors can be explained; some of them can be ignored (such as overhead costs) because for some libraries there are no costs for utilities or for space (thus no item #4). Others have these costs, and the changing of the format of the catalog may in fact affect those costs. The costs that are determined will not be exact in most cases; they will only be estimates.

Exact costs are hard to come by because of the problems of inflation, aging of data, and changing technology. To assist in developing an overall picture of the cost of any one of the formats, I suggest the use of a cash-flow diagram. This is the type used by industrial engineers in costing projects. The chart shows expenditures going out and revenues coming in on a time line. We can use it for showing costs going in and savings going out. Also, we will want to look at these costs by determining which cost factors are continuing and which ones are capital one-time investments. For additional information about this type of costing, consult basic engineering economy texts such as Engineering Economy: Analysis of Capital Expenditures by Gerald W. Smith (8). Cash-flow diagrams are discussed in the first chapters. The rules for their use are clear and the math required is simple arithmetic. An example of tables derived from this type of costing can be found in Future of the General Library Catalogs of the University of California at Berkeley: Phase III (9). Figure 7 and 8 are from that report.

For the costing of a Com Catalog, the ALA publication by the Reference and Adult Services Division, Catalog User Committee, entitled "Commercial Com Catalogs: How to Choose, When to Buy" is excellent because it relates the basic costs areas and includes suggestions on how to deal with vendors. (10) There are other materials in the journal literature supporting the general subject area of micrographics, in particular the Journal of Micrographics.

A question - how many of you now have COM catalogs?

We will now turn to an analysis of the impact on your libraries of AACR II and the closing of LC's catalogs. It may be beneficial for libraries to run their own experiment to determine the impact of the rule changes on their individual library. To help in this area Robin Downes of the University of Michigan, Ann Arbor, has put together a methodology for assessing the impact of AACR II. (11) The basic idea behind this methodology and that of others is to determine the impact of the rule changes for your individual catalogs. This is done by taking a sample of new cataloging, applying the new rules, and recording what changes are required in your catalog. The sample might be taken over a

week, two weeks, or two months for the new items added to your collection. The idea is to collect as much data as possible to see the impact on your catalog.

A study of this type was conducted at Johns Hopkins University. The study is reported in the 11th issue of the Alternative Catalog Newsletter.(12) How many of you read this newsletter?

Once a library has determined the expected impact of the rule changes, then the question remains of what form the catalog should take. There are several things to keep in mind, not the least of which is the stated purpose for our individual catalogs. A matrix that shows some of the obvious ways in which one can go was distributed at the LITA workshop.(13) According to Don Hanmer (LITA's Executive Secretary) this came from LC. A copy of this matrix is presented in Figure 9. One must think of all of the possibilities here, and the consequence of each of these for one's own library.

The final area I wish to speak on is a system for managing and planning for these changes that are going to be made in our libraries. There are several different methodologies that one can use. There is the Critical Path Method commonly known as CPM. There is also PERT, the Program Evaluation and Review Technique. However, there is an older method which I prefer for this kind of planning. It is called a GANTT CHART.

Gantt charts, used in production planning and controlling, consist of bar charts depicting work planned and work accomplished over time. For our purposes they can show when events are to take place and who is going to be doing the different activities. An example of a Gantt-type chart is shown in Figure 10. This is also taken from one of Berkeley's reports.(9) The idea is to list the major activities and who is responsible for each of these activities. As each activity is accomplished, it is checked off. The beauty of this type of planning, whether it be CPM, PERT or GANTT, is that it shows many of the interrelationships and overlaps between the different tasks. It shows that many things can be done in parallel. The McGraw-Hill Encyclopedia of Science and Technology presents concise explanations as to how to use GANTT, PERT and CPM. (14)

One of the greatest values of these planning methods is that they aid communications. All those working on the project can have an understanding of the overall project and their roles in it. That is, they can see the big picture and know what it's all about. I would again like to stress a point made earlier: Involve your staff--staff from all different levels within the library. We are making real

changes to our libraries, so involving trustees, patrons, and faculty may be called for too. We are, after all, librarians working in a changing world and "A Library is a growing organism."

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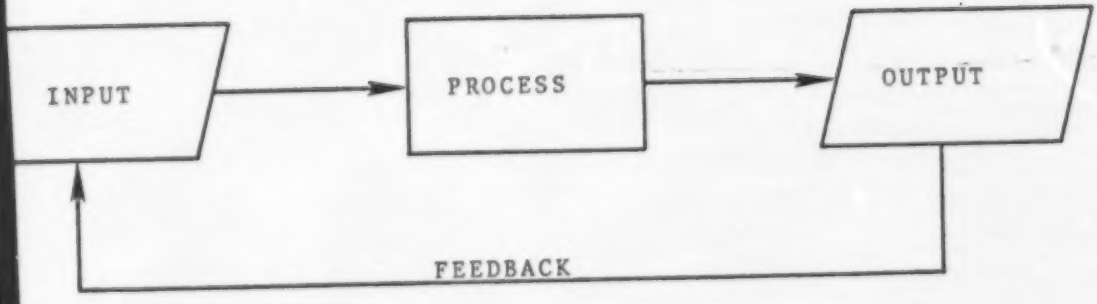

Figure 1
General Process Diagram

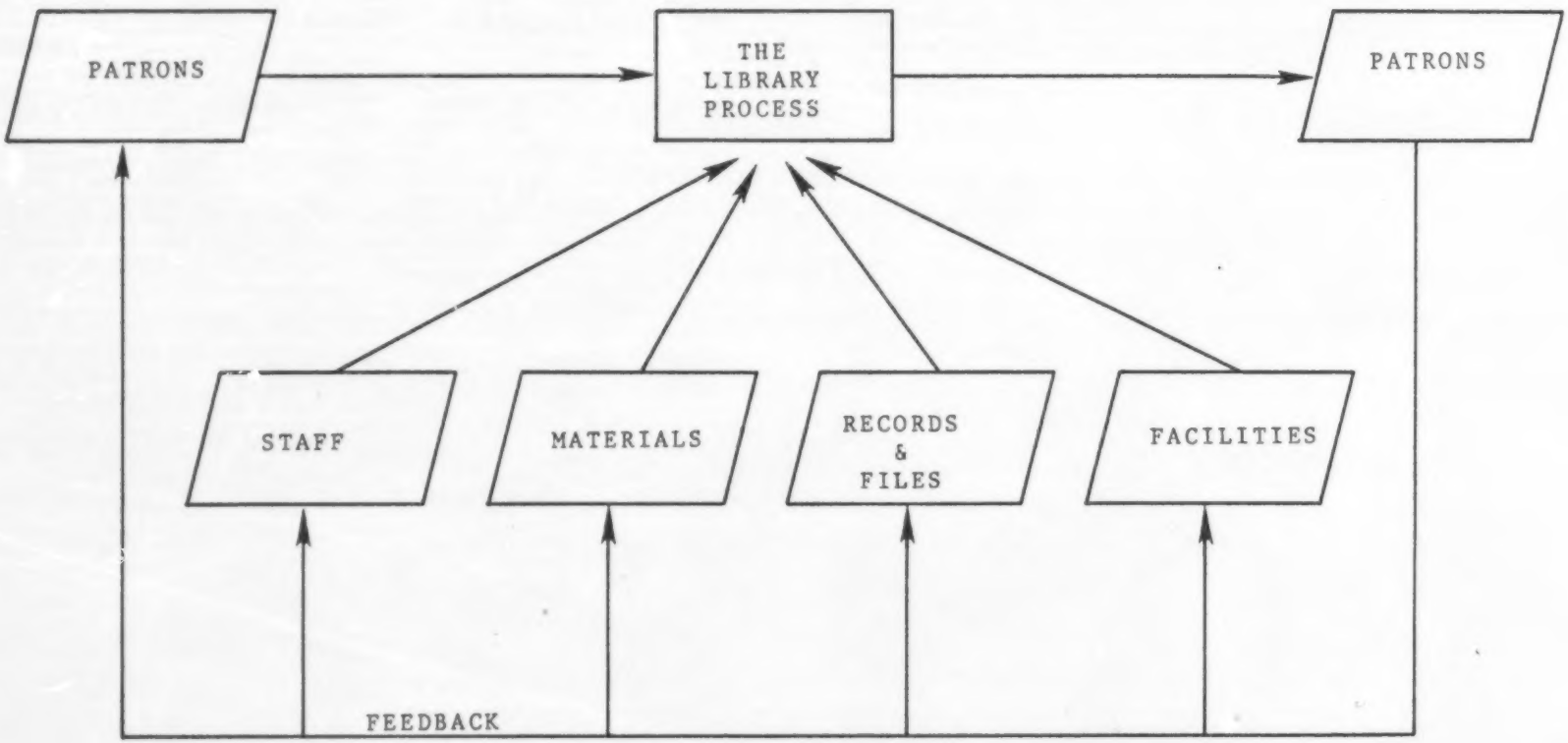

Figure 2

The Library Process Diagram

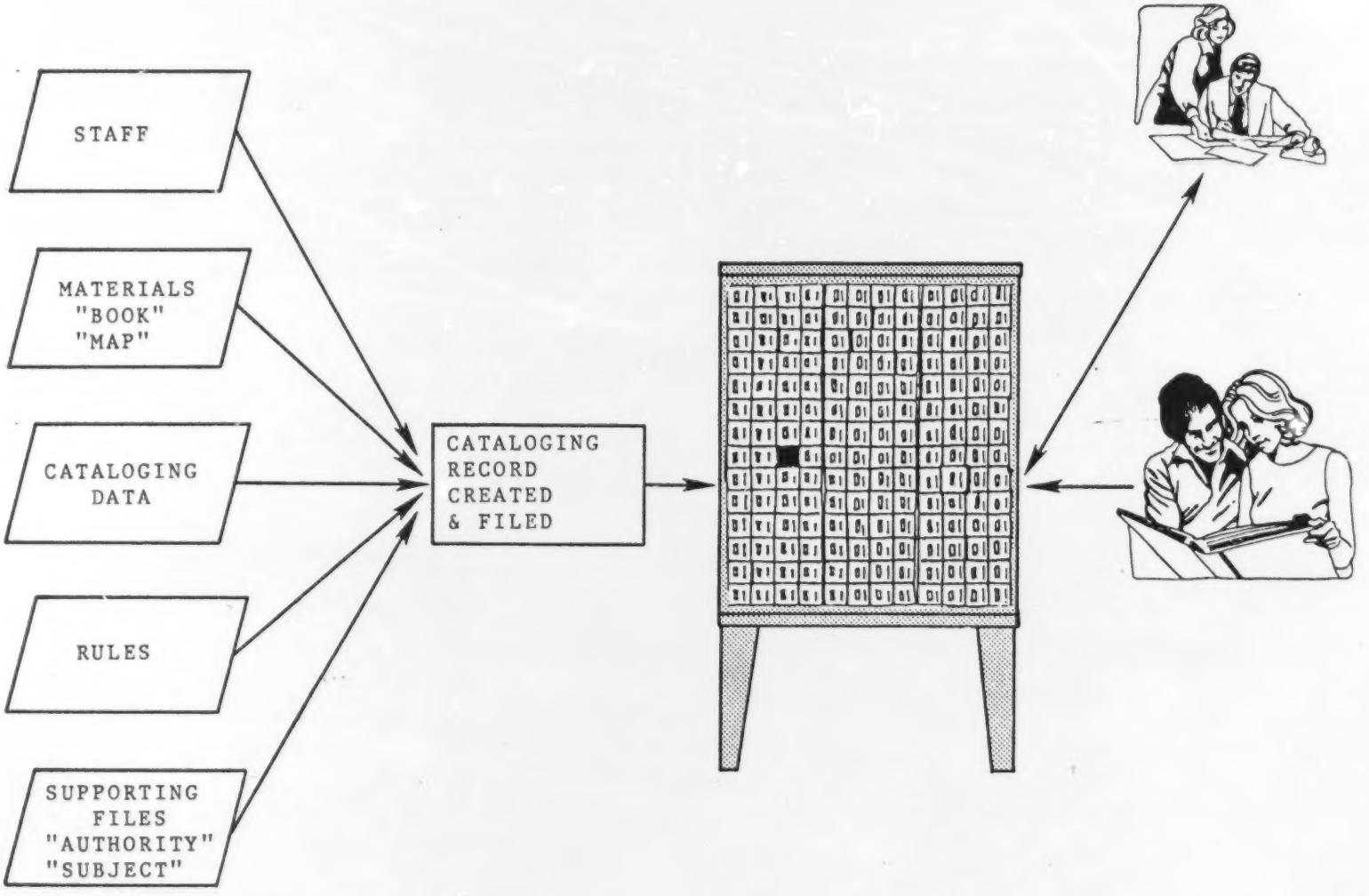

Figure 3

The Catalog Process Diagram

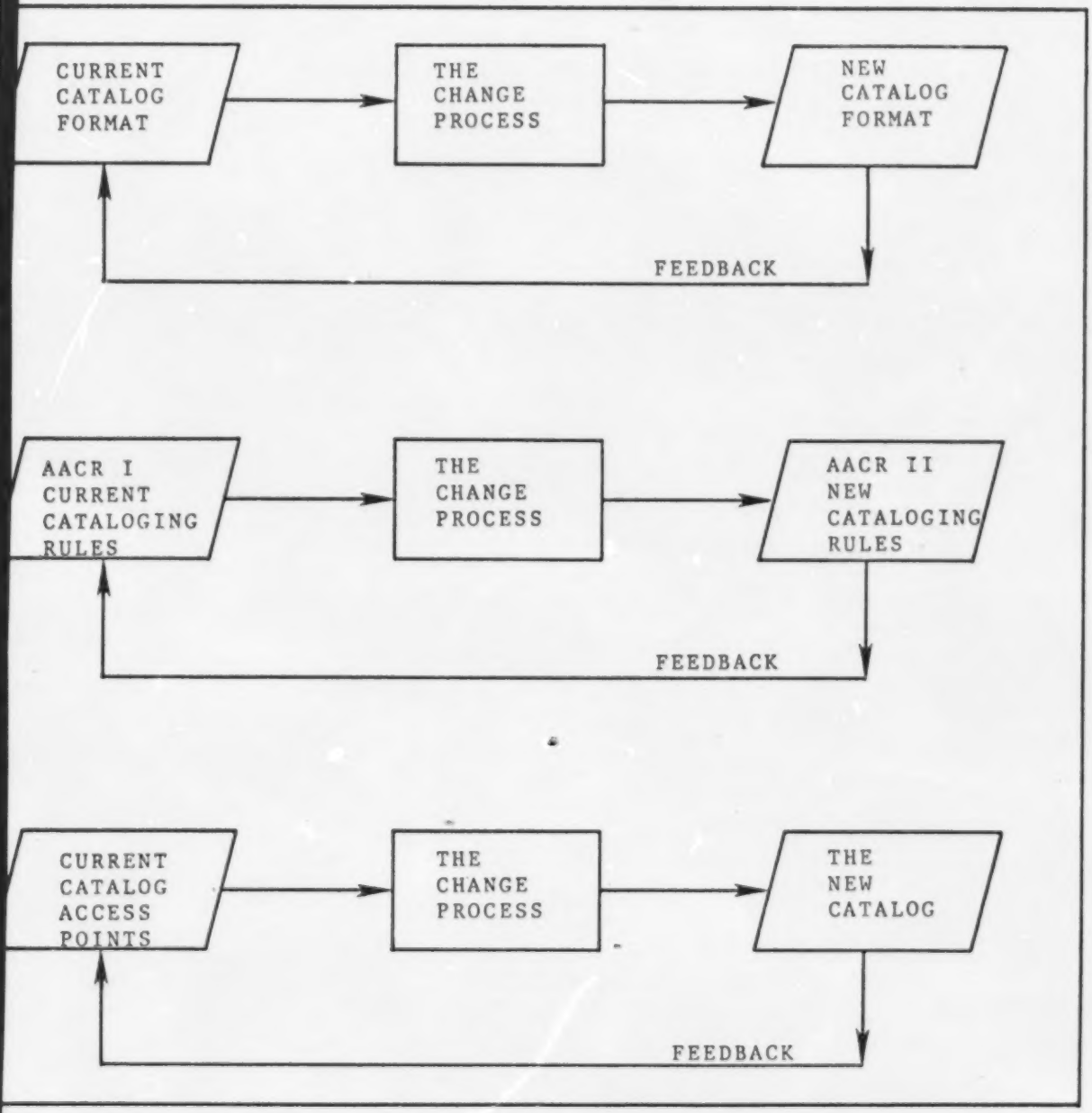

Figure 4

Interaction of Change Problems In Libraries

FILE NAME:	What is the file called by the people who use it?
FILE CONTROLLED BY:	Who keeps the file? Who sees to it that things get filed? Who knows the filing rubs used?
FORMAT (or style):	Is the format a pendaflex letter file, a 3" by 5" 16 drawer card file, a letter file with four drawers?
LOCATION:	In what room and where in that room is the file kept? Is it near any other major files?
FILED BY:	What is the main entry for the file? (Dealers' names? Fund numbers?) Is there more than one entry per item? If so, how many and under what?
SIZE:	How big is it? (Two full drawers of a four drawer letter file? 205 cm of 3" x 5" card in a four drawer card file with a total of 500 cm of space?)
USE:	How often is it used? (Daily by five people? Once a week?)
RETAINED FOR:	How long in years, are materials kept in the file before they are discarded? When is the file needed?
AGE:	How long has the file been around? (Ten years or as long as anyone can remember?)
USED FOR:	What does the file do for the people that use it? (Keep a record of...; hold dealer invoices that come without books?)
DATA ELEMENTS:	What is the information asked for on the forms filed into this file? Is it bibliographical data, accounting data, or copies of letters?

Figure 5

File Analysis Form for Library Catalogs

COST FACTORS

	CURRENT	CATALOG FORM A	CATALOG FORM B	CATALOG FORM N
1. LABOR A. DIRECT B. INDIRECT				
2. EQUIPMENT A. FIRST COST B. MAINTENANCE C. DEPRECIATION				
3. SUPPLIES AND MATERIALS				
4. OVERHEAD OR FIXED COSTS				
5. TOTAL COSTS				

Figure 6

Method of Costing Library Expenses

ON-LINE TECHNICAL PROCESSING

Annual Operating Costs:

	6. Telephone Line	7. Terminal Maintenance +	8a. Cataloging and Cards for Main Library	8b. Additional card sets for branches	8c. Added cataloging data	8d. Printed card set for branches	9. Training	10. Storage
Unit Cost	110/ month		$2.50	25¢ per set	$2.00	25¢ per set	$15,000	10¢ per title
1976/77	$1,320	$2,150	$136,687	$7,594				$ 2,000
1977/78	1,320	4,300	151,875	8,437				6,000
1978/79	1,320	6,450	167,062	9,281			$15,000	12,000
1979/80	1,320	6,450			$180,000	$10,125	15,000	67,840
1980/81	1,320	6,450			180,000	10,125	15,000	123,680
1981/82	1,320	6,450			180,000	10,125	15,000	179,520
1982/83	1,320	6,450			180,000	10,125	15,000	235,360
1983/84	1,320	6,450			180,000	10,125	15,000	291,200
TOTAL	$10,560	$45,150	$455,624	$25,312	$900,000	$50,625	$90,000	$917,600

+ Estimated at 10% of terminal cost; no contract available.

Figure 7

Source: (9)

SUMMARY OF ESTIMATED COSTS BY YEARS

Years	Budgeted	Capital Outlay	Annual Operating Costs	Annual Total
1. 1976 - 1977	$25,000*	$ 60,700	$ 170,369	$ 256,069
2. 1977 - 1978		74,750	388,270	463,020
3. 1978 - 1979		93,000	837,379	930,379
4. 1979 - 1980		118,000	1,607,867	1,725,867
5. 1980 - 1981		69,750	2,189,286	2,259,036
6. 1981 - 1982		0	2,181,127	2,181,127
7. 1982 - 1983		0	2,237,371	2,237,371
8. 1983 - 1974		0	2,293,614	2,293,614
TOTALS	$25,000	$416,200	$11,905,283	$12,346,483

* This $25,000.00 has been budgeted for developing a detailed plan for the conversion of retrospective data in the Gernal Library's main catalogs. This project will be under the direction of the Associate University Librarian for Technical Services.

Figure 8

Source: (9)

MAP OPTIONS AND EFFECTS

EFFECTS: \ OPTIONS:	#1 Retain pres. c.c. + super.	#2 Retain pres. c.c. de-super. + c-ref.	#3 Retain pres. c.c. de-super + chg. old tags.	#4 New c.c.--Imprint date	#5 New each.-std. c.c. --Imprint date	#6 New c.c.--cat. date	#7 New each.-std.c.c. --cat. date
1. Adherence to AACR 2/LC	No	Yes	Yes	Yes	Yes	Yes	Yes
2. Cataloging work flow	Increased Original work; less LC/copy usable w/o adjustm.	Increased checking of references	Increased checking + many chgs. on catalog cards	2 sets of rules	2 sets of rules	Least change	Least change
3. Data machine-readable	Not applicable	Not applicable	Not applicable	Yes	Yes	Yes	
4. Filing	Unchanged	Increased # of c-refs + compls.	Increased in re-file of changes	2 sets, to file	Not applicable	Easier due to small size	Not applicable
5. Card changing (maintenance)	Unchanged	Small increase	Sizeable	2 sets, to maintain	Old Cat. still to be maintained	Perhaps c-refs in both cat.	Perhaps c-refs in both cat.
6. Closing or freezing catalog	Not applicable	Not applicable	Not applicable	No	No	Yes	Yes
7. User sophistication	Unchanged	Greater complexity	Less complexity	2 sets, to consult	2 sets, to consult	2 sets, to consult	2 sets, to consult
8. Consistency of headings	Unchanged	Greater complexity	Increased	Non-consistent old-unchanged	Non-consistent old-unchanged	Non-consistent old-unchanged	Non-consistent old, unchanged
9. Ease of determining which to consult	Not applicable	Not applicable	Not applicable	Yes	Yes	Increasing with time	Increasing with time
10. Non-Roman alphabets	Unchanged	Unchanged	Unchanged	Unchanged	? (Romanization)	Unchanged	? (Romanization)
11. Adaptation to new technology or rule changes	Increasingly difficult	Somewhat increasingly difficult	Somewhat increasingly difficult	New--OK Old--difficult	New--OK Old--difficult	Easy	Easiest
12. Additional personnel time	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13. Hardware acquisition	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Yes

Figure 9

Source: Library of Congress

SCHEDULE OF EVENTS

F.Y.	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
CATALOG CARDS	CATALOG CARDS PRODUCED FOR THE MAIN CARD CATALOG										
	CATALOG CARDS PRODUCED FOR THE BRANCH LIBRARY CATALOGS										
CONVERSION				CONVERSION OF THE MAIN A/T AND SUBJECT CATALOGS					CONVERSION OF LOCAL (BRANCH) CARD CATALOGS TO MACHINE READABLE FORM		
CATALOG DATA				ALL CURRENT CATALOGING DATA INPUT OR RECEIVED IN					MACHINE	READABLE	FORM
				ANNUAL MICROFICHE (BACK UP FOR MAIN		CATALOG CATALOG)					
TERMINALS	TERMINALS PLACED IN TECHNICAL SERVICES (3)	(4)	(5)								
		(6)	(10)	TERMINALS PLACED IN PUBLIC (20) SERVICES (15)							
ON ORDER DATA	FICHE ON ORDER/IN PROCESS ALL LOCATIONS			LIST PRODUCED FOR							
						ON ORDER/IN PROCESS DATA ALL LOCATIONS			AVAILABLE ON-LINE AT		
SPECIAL EVENTS		MAIN A/T AND SUBJECT CARD CATALOGS CLOSED		ALL CATALOG CARDS COMPUTER PRODUCED				CATALOG CARD PRODUCTION STOPPED	BRANCH CARD CATALOGS CLOSED		

Figure 10

Source: (9)